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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,899	06/29/2005	Motoo Asai	259189US90PCT	2986
22850	7590	04/27/2010	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			JAHAN, BILKIS	
			ART UNIT	PAPER NUMBER
			2814	
			NOTIFICATION DATE	DELIVERY MODE
			04/27/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/509,899	Applicant(s) ASAI ET AL.	
	Examiner BILKIS JAHAN	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-71 is/are pending in the application.
- 4a) Of the above claim(s) 12-71 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/21/06, 7/18/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Title

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-11 rejected under 35 U.S.C. 102(a) as being anticipated by Motoo (JP2002-329891). Machine translation of JP2002-329891 has been used for the rejection and attached.

Regarding claim 1, Motoo discloses a substrate for mounting an IC chip (Figures 1, 2) comprising:

- ❖ an insulating substrate 121 (Fig. 1, Para. 20) having a first surface (upper) and a second surface (lower) on an opposite side of the first surface; and, as serially built up on both faces

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- ❖ a first built-up structure 122 (Para. 60) formed on the first surface (upper) of the insulating substrate 121 and comprising a conductor circuit 124 (Para. 60) and an interlaminar insulating layer (Para. 60);
- ❖ a second built-up structure 122 (Para. 60) formed on the second (lower) surface of the insulating substrate 121 and comprising a conductor circuit 124 and an interlaminar insulating layer (Para. 60);
- ❖ a first solder resist layer 134 (Fig. 1, Para. 60) formed as an outermost layer over the first built-up structure 120 (upper); a second solder resist layer 134 (Para. 60) formed as an outermost layer over the second built-up structure (lower);
- ❖ an optical element 138a (Para. 52) mounted over the first solder resist layer 134; and an optical path 142 (Para. 61) for transmitting optical signal to or from the optical element 138a and is said substrate 121 for mounting an IC chip 140 (Para. 62) penetrating through the insulating substrate 121,
- ❖ first built-up structure (upper, Para. 60), second built-up structure (Lower, Para. 60), first solder resist layer 134 and second solder resist layer 134.

Regarding claim 2, Motoo discloses said optical path for transmitting optical signal comprises a vacancy 142.

Regarding claim 3, Motoo discloses said optical path for transmitting optical signal comprises a resin composition and a vacancy 142a.

Regarding claim 4, Motoo discloses said optical path 142 for transmitting optical signal comprises a vacancy and a conductor layer around the vacancy (Fig. 1).

Regarding claim 5, Motoo discloses said optical path for transmitting optical signal comprises a resin composition, a vacancy and a conductor layer around these (Para. 17).

Regarding claim 6, Motoo discloses the optical element 138a is mounted on the first solder resist layer 134.

Regarding claim 7, Motoo discloses said optical element is at least one of a light receiving element and a light emitting element 139a.

Regarding claim 8, Motoo discloses an electronic component 138 mounted on a surface of an IC one of the first solder resist layer 134 and the second solder resist layer 134.

Regarding claim 9, Motoo discloses a micro lens 146a, 146b disposed on an end portion of the optical path 142 for transmitting optical signal.

Regarding claim 10, Motoo discloses said the optical path for transmitting optical signal has a cross-sectional diameter which is 100 to 500 micrometer (claim 10).

Regarding claim 11, Motoo discloses said substrate to each other further comprising a plated-through hole 142 connecting the conductor circuit of the first built-up structure (Upper, Para. 60) and the conductor circuit of the second built-up structure (lower) through the insulating substrate 121 and a via-hole connecting the conductor circuit in the first built-up structure (upper, Para. 60) and another conductor circuit in the first-built-up structure through the interlaminar insulating layer in the first built-up structure (Figures 1, 2).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BILKIS JAHAN whose telephone number is (571)270-5022. The examiner can normally be reached on M-F, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571)-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wai-Sing Louie/
Primary Examiner, Art Unit 2814

BJ